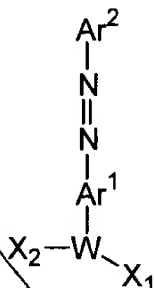


26. (New) A quencher-phosphoramidite reagent compound having the formula:



wherein

Ar<sup>1</sup> and Ar<sup>2</sup> are each independently a substituted or unsubstituted aryl group;

X<sub>1</sub> is selected from the group consisting of H, (C<sub>1</sub>-C<sub>12</sub>)alkyl, aryl, heteroaryl, and protected or unprotected functional group;

X<sub>2</sub> is a moiety reactive towards nucleophiles; and

W is a linking group having from 3 to 100 backbone atoms selected from C, N, O, S, Si and P, said linking group being cyclic, acyclic, aromatic or a combination thereof.

27. (New) A compound of claim 26 wherein X<sub>1</sub> is selected from the group consisting of OH, O-dimethoxytrityl, O-methoxytrityl, O-trityl and an oxygen atom having an acid labile blocking group.

28. (New) A compound of claim 26 wherein X<sub>2</sub> is selected from the group consisting of a phosphorous coupling moiety, a pentafluorophenoxy moiety and a succinimidyl moiety.

29. (New) A compound of claim 26 wherein X<sub>2</sub> is a phosphoramidite.

30. (New) A compound of claim 26 wherein  $-W(X_1)(X_2)$  is  $-N(CH_2CH_2Ra)(CH_2CH_2Rb)$  and Ra and Rb independently represent a functional group or a protected functional group for attaching the quencher to a linking group or conjugate.

31. (New) A compound of claim 26 wherein  $-W(X_1)(X_2)$  is  $-N(CH_2CH_2OH)_2$ .

32. (New) A compound of claim 26 wherein one of  $Ar^1$  and  $Ar^2$  is directly or indirectly substituted with a substituted aryl group ( $Ar^3$ ), where  $Ar^3$  extends the resonance ability of the  $Ar^1-N=N-Ar^2$  aromatic system and thereby increases the wavelength absorbance maximum of the compound.

33. (New) A compound of claim 32 wherein  $Ar^1$  is directly substituted with  $Ar^3$ .

34. (New) A compound of claim 32 wherein  $Ar^1$  is indirectly substituted with  $Ar^3$ .

35. (New) A compound of claim 32 wherein  $Ar^2$  is directly substituted with  $Ar^3$ .

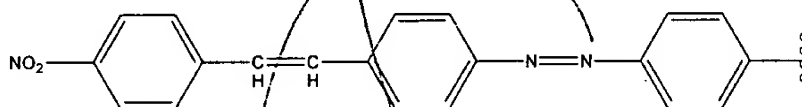
36. (New) A compound of claim 32 wherein  $Ar^2$  is indirectly substituted with  $Ar^3$ .

37. (New) A compound of claim 29 wherein  $Ar^1$  or  $Ar^2$  is indirectly substituted with  $Ar^3$  through a group selected from  $-(C\equiv C)_n-$  and  $-(CR'=CR')_n-$  where n is 0 to 5 and R' is independently selected from hydrogen,  $(C_1-C_8)$ alkyl and heteroalkyl,

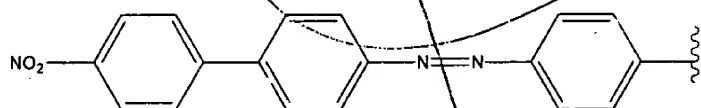
unsubstituted aryl and heteroaryl, (unsubstituted aryl)-(C<sub>1</sub>-C<sub>4</sub>)alkyl, and (unsubstituted aryl)oxy-(C<sub>1</sub>-C<sub>4</sub>)alkyl.

38. (New) A compound of claim 29 wherein Ar<sup>1</sup> or Ar<sup>2</sup> is indirectly substituted with Ar<sup>3</sup> through a double bond selected from carbon-carbon and nitrogen-nitrogen double bonds.

39. (New) A compound of claim 26, where Ar<sup>2</sup>-N=N-Ar<sup>1</sup>- has the structure:



40. (New) A compound of claim 26 wherein Ar<sup>2</sup>-N=N-Ar<sup>1</sup>- has the structure:



41. (New) A compound of claim 29 wherein at least one of Ar<sup>1</sup>, Ar<sup>2</sup> and Ar<sup>3</sup> is substituted with -halogen, -OR', -OC(O)R', -NR'R'', -SR', -R', -CN, -NO<sub>2</sub>, -CO<sub>2</sub>R', -CONR'R'', -C(O)R', -OC(O)NR'R'', -NR''C(O)R', -NR''C(O)<sub>2</sub>R', -NR'-C(O)NR''R''', -NH-C(NH<sub>2</sub>)=NH, -NR'C(NH<sub>2</sub>)=NH, -NH-C(NH<sub>2</sub>)=NR', -S(O)R', -S(O)<sub>2</sub>R', -S(O)<sub>2</sub>NR'R'', -N<sub>3</sub>, -CH(Ph)<sub>2</sub>, perfluoro(C<sub>1</sub>-C<sub>4</sub>)alkoxy, and perfluoro(C<sub>1</sub>-C<sub>4</sub>)alkyl, in a number ranging from zero to the total number of open valences on the aromatic ring system; and where R', R'' and R''' are independently selected from hydrogen, (C<sub>1</sub>-C<sub>8</sub>)alkyl and heteroalkyl,